

Cited Device

Utility Model Title: Fiber optic switch device

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Applicant: Industrial Technology Research Institute

1. A fiber optic switch device of one kind,  
particularly in a fiber optic switch constructed using a  
10 helical mechanism, characterized by including:

a plurality of optical fibers, which have  
provided, at any one end of each respective optical fiber,  
one parallel condenser lens, and whose [respective] other  
end outputs optical signals by means of a connector, and,  
15 inclusive of these optical fibers with a parallel  
condenser lens end face, the plurality of optical fibers  
are fixed in accordance with a 360 degree circumferential  
angle on a base at given predetermined circumferential  
angles; and

20 one movable optical fiber of a helical optical  
fiber, one end A of which penetrates a hole in the base so  
as to be able to connect to an interface of an external optical  
signal system, and one end B of which is fixed to a support  
frame of a step motor, and which optical fiber has one helical  
25 device engaged between optical fiber end A and end B;

characterized in the optical fiber fixed on the

motor can be coupled with a [respective] end face of the optical fibers fixed on the base at given predetermined circumferential angles, and the scanning range of light paths thus formed controls an angle of rotation of the motor that is 360 degrees or more than [360 degrees].

2. The fiber optic switch device according to claim 1, characterized in that a circumferential angle of distribution of the optical fibers in circumferential predetermined positions on the base is able to achieve a range with a maximum of 360 degrees, and in that an end face of the optical fiber which is movable through actuation of the step motor also performs optimally non-contacting optical coupling with an end face of any one optical fiber in a [given] circumferential position.

3. The fiber optic switch device according to claim 1, characterized in that an optical fiber frame can be helically mounted between end A and end B of the optical fiber, by means of the helical device.

#### Brief Description of the Drawings:

Fig. 1: Full view according to the commonly known technology.

Fig. 2: Embodiment of the present device. Lateral cross-sectional view of a fiber optical switch frame.

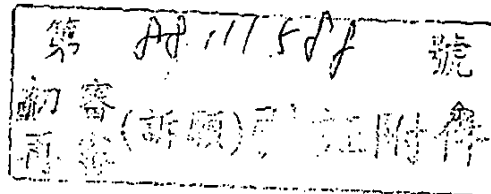
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(54) 名稱: 光纖開關裝置

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(57) 申請專利範圍:

1. 一種光纖開關裝置，尤指一種利用螺旋機構製作而成的光纖開關，其包含有：

(1) 多條光纖，每一條光纖的一端，均設有一平行聚光透鏡，另一端則以連接器輸出光訊號，這些含平行聚光透鏡端面的光纖，延著三百六十度圓周角，固定在某些特定圓周角之基台上；

(2) 一條可移動光纖，一端A穿過基台孔洞可與外界光訊系統介面相連接，另一端B則固定於步進馬達支撐架上，並在光纖A端和B端之間套上一螺旋裝置而成螺旋狀光纖；

(3) 控制馬達旋轉之角度，則固定於馬達上之光纖可與固定在某些特定圓周角基台上之光纖端面耦合或形成

光通路，其掃描範圍為三百六十度或甚至超過。

2. 如申請專利範圍第1項所述之光纖開關裝置，其中佈置於基台上之圓周特定位置之光纖，其分佈之圓周角度最高可達三百六十度範圍，步進馬達帶動著可移動光纖之端面，與在圓周置具上任一條光纖端面作最佳之非接觸性光耦合。

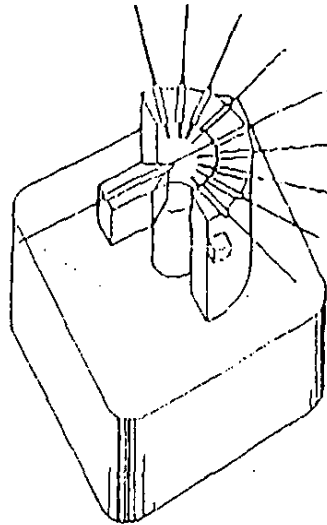
10. 3. 如申請專利範圍第1項所述之光纖開關裝置，其中在光纖A端與B端之間套以螺旋裝置以使得光纖架設呈螺旋狀。

圖示簡單說明：

15. 圖一為習用技術之立體示意圖。

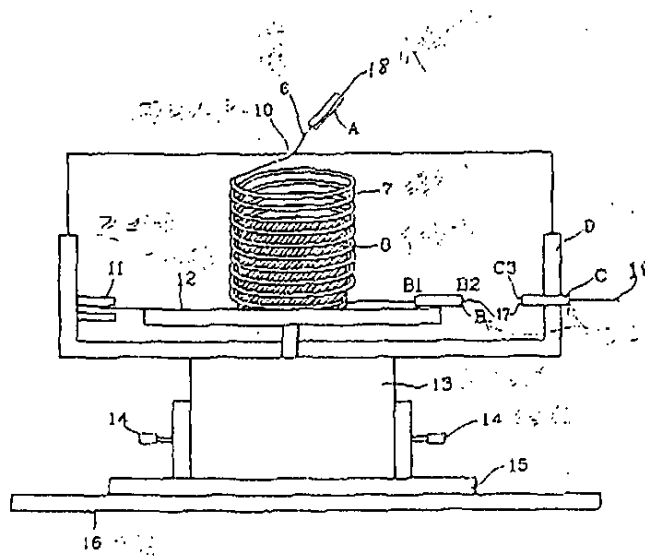
圖二為本創作之實施例，光纖開關 (Optic Switch) 架構橫截面示意圖。

(2)



(PRIOR ART)

圖一 Fig. 1



圖二 Fig. 2